AN

ESSAY

ON

NATURAL LABOURS.

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Naturæ Numen ubique præsens cernitur.

HARV.

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TOgether with this Eſſay, it was my intention to have publiſhed that on Difficult Labours, which is now in great forwardneſs: But as it is a ſubject of the firſt conſequence, and muſt neceſſarily contain the hiſtory of what has hitherto been propoſed or done in Labours of that Claſs, it is deferred for the preſent; that I may have time to give it the conſideration due to a matter of ſuch great importance.

Auguſt 6th, 1786.

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ON

LABOURS.

CHAP. VII.

SECTION I.

HAVING given a deſcription of all the parts concerned in parturition, and enumerated the principal alterations produced in the conſtitutions of pregnant women; and having taken notice of all the previous changes, we come in the next place to the conſideration of a *Labour*. This term is generally uſed to ſignify every act performed with difficulty or pain, but by long eſtabliſhed cuſtom, it has been appropriated in this and many other countries, to parturition, the circumſtances of which it is well ſuited to deſcribe.

Before we proceed to the hiſtory of labours, it is requiſite that we ſhould divide them into claſſes

or kinds; and though objections might be made to a very ſtrict arrangement, ſome appears to be both convenient and neceſſary, for the purpoſe of enabling us to convey our ſentiments with perſpicuity to others, and for real uſe in practice.

With theſe intentions, labours may be divided into the four following claſſes:

1. Natural.
2. Difficult.
3. Preternatural.
4. Anomalous.

Under one or other of theſe diſtinctions, every kind of labour which can occur, may be reduced.

SECTION II

Natural labours, which have had their denomination from their frequency, from the regularity of the manner in which they proceed, or from their being completed by the unaſſiſted efforts of the conſtitution, form a ſtandard by which we are to judge of every other claſs. It is therefore neceſſary that we ſhould give as preciſe an idea of them as the ſubject will allow. We will then ſay that every labour ſhall be called *natural*, if the head of the child preſents, if it is completed within twenty-four hours, and if no artificial aſſiſtance is required.

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Should any of theſe three leading marks of the definition of a natural labour be wanting, it muſt come under ſome other denomination. Thus, if any other part except the head ſhould preſent, the labour would be *preternatural*; if it ſhould be prolonged beyond twenty-four hours, it would be *difficult*; and if artificial aſſiſtance were required, though the labour might be completed within one hour, it would be *anomalous*, or muſt be referred to ſome other claſs.

The preſentation of the head of the child conſtitutes an eſſential part of the definition of a natural labour, yet this may happen in various ways. The moſt common poſition of the head, and that in which it is expelled with the greateſt facility is, when the hind head is diſpoſed to turn towards the *pubes*, and the face towards the hollow of the *ſacrum*. But the face is ſometimes inclined towards the *pubes*, and the hind-head towards the hollow of the *ſacrum*; or there may be an original preſentation of the face; or one, or both arms may deſcend together with the head. Theſe differences in the poſition of the head do not create labours of another claſs, but they are to be conſidered merely as varieties of natural labours; experience having fully proved, that in any of theſe poſitions, or with theſe circumſtances, the head may be expelled by the natural efforts, with perfect ſafety to the mother and child, though not with ſuch eaſe

and expedition, as if the hind-head were turned towards the *pubes*. It muſt alſo be obſerved, tho' another part of the definition be taken from time, that it is poſſible for one woman to make greater efforts, and to undergo more pain in two hours, than another may in twenty-four. Then the definition will be imperfect; as almoſt all general diſtinctions muſt be, when they come to be examined and tried by individual caſes.

A natural labour was the laſt thing well underſtood in the practice of midwifery, becauſe ſcientific men not being formerly employed in the management of common labours, had no opportunities of making obſervations upon them. Practitioners were then engaged in qualifying themſelves for the exerciſe of their art, whenever they were called in to give aſſiſtance; and not in making nice diſtinctions, or inveſtigating the particular caſes, in which only it might be neceſſary to exerciſe it.

SECTION III.

We have before given an account of the changes which precede labours, and are now to give a detail of the ſymptoms which accompany them.

The firſt ſymptom which indicates a preſent labour is anxiety; apprehenſion of danger, or doubt

doubt of ſafety. This does not ſeem to be confined to the human ſpecies, but to be common to all creatures, as they univerſally ſhew ſigns of dejection and diſtreſs at this time, though they ſuffer in ſilence; and even thoſe animals which are domeſticated, ſtrive to conceal themſelves, and refuſe all offers of aſſiſtance. This anxiety, which is probably occaſioned by the firſt changes made upon the *os uteri*, and by the conſent between the vital organs and that very irritable part, is often exceedingly increaſed by an original timidity of diſpoſition, eſpecially with firſt children; or by the diſcovery of untoward accidents happening to other women under the ſame circumſtances, with whom a ſimilarity of ſituation is the cauſe of a moſt intereſting ſympathy. From motives of humanity as well as profeſſional propriety, it is therefore at theſe times neceſſary, by ſteady conduct, and by arguments ſuited to the patient's own notions, or the peculiar cauſe of her fears, to remove her apprehenſions; and by ſoothing and encouraging language, and by attention to her complaints, though not indicatory of any danger, to afford her every conſolation in our power. This anxiety is greateſt in every woman in the beginning of labour, for the ſharp pains which attend its progreſs, excite other ſentiments in her mind. But we are at all times to be on our guard, that her ſupplications for relief, do not prevail with us to attempt to give aſſiſtance,

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when our interpoſition is not required, and when it muſt neceſſarily be productive of miſchief.

2. At the commencement of labour, and ſometimes on the return of every pain, women have frequently one or more *rigors*, with or without a ſenſe of actual cold. Theſe are not to be conſidered as ſigns of the acceſſion of diſeaſe, but as the effects of an increaſed irritability ſpread through the whole frame; or, perhaps, as proofs that all the powers of the conſtitution are ſummoned to contribute towards the important proceſs which is carrying on. Theſe *rigors* are void of danger, and they are moſt apt to occur when the *os uteri* begins to dilate, and when it is fully dilated. But in the courſe of a labour, when there is one ſtrong and diſtinct *rigor*, it is often followed by ſome diſeaſe, dangerous either to the mother or child.

3. When the head preſents, and ſcarcely in any other poſition of the child, women have generally ſome degree of ſtrangury in the latter part of pregnancy; and this ſymptom is increaſed on the approach of labour, by the preſſure of the deſcending head upon the *cervix* of the bladder. Should the preſſure be very great, or of long continuance, a ſuppreſſion of urine may be occaſioned, before, or in the time of labour. To prevent the inconveniencies which might ariſe from a diſtention of the bladder, either to the part itſelf, or by obſtructing

ſtructing the paſſage of the head, it is neceſſary to urge the patient to void the urine frequently, and in caſe of a ſuppreſſion, to give relief by introducing the catheter. On the other hand, ſhould the preſſure by the head be made upon the *fundus* of the bladder, there will be an involuntary diſcharge of the urine; or if there ſhould be any extraordinary agitation from a cough, or any ſimilar cauſe, there will be the ſame conſequence, which is very troubleſome but not dangerous.

4. It is not unuſual for patients to have a *teneſmus*, or one or two, or more looſe ſtools in the beginning or courſe of a labour. Both theſe ſymptoms may be occaſioned by the conſent between the *os uteri* and the *ſphyncter* of the *anus*, or by the preſſure made upon the *rectum*, as the head paſſeth through the *pelvis*. There is in the minds of all women a popular prejudice and unreaſonable dread of complaints in the bowels, through every ſtage of pregnancy, parturition, and childbed; and of courſe there is never any objection, but on the contrary, a willingneſs to uſe ſuch means as are adviſed to ſuppreſs them, or reſtrain any diſpoſition to a *diarrhœa*. The error has ariſen from confounding the looſeneſs which often accompanies the laſt ſtage of the puerperal fever, with that which proceeds from any other cauſe. The *diarrhœa* which attends the beginning or courſe of a labour, is ſo far from occaſioning or from proving any danger,

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that the patient is evidently relieved by it; a greater freedom being given to the action of the *uterus*, more room made for the paſſage of the child, and any feveriſh diſpoſition thereby removed or prevented. If therefore the patient ſhould not at that time have ſtools ſpontaneouſly, it is very ſound practice to direct one or more emollient clyſters for the beforementioned purpoſes. Nor are thoſe the only good ends which are anſwered by clyſters, for they ſoothe the parts when too much or improperly irritated, and ſerve as a fomentation, which by its warmth and moiſture, may give or amend their diſpoſition to dilate. In very ſlow labours, when the head of the child has dwelt for a long time in one poſition, it is not unuſual for the patient to have one or more looſe ſtools immediately before the advancement of the head, after which the labour is ſoon concluded.

5. The uncoloured mucous diſcharge which pretty generally occurs before labour, on its acceſſion, is uſually tinged with blood, or a ſmall quantity of pure blood is diſcharged. This ſanguineous diſcharge which varies in quantity and appearance in different women, is popularly called a *ſhew*, and it happens more particularly at two periods of a labour; when the *os uteri* begins to dilate, and when it is finally dilated. In the firſt inſtance it is probably occaſioned by the ſeparation of a few of thoſe veſſels by which the membrane which connects the *ovum* to the *uterus*,

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was originally bound; and in the ſecond, by the effuſion of ſome blood before extravaſated in the ſubſtance of the *os uteri*; for this part in ſome caſes acquires an uncommon thickneſs from that cauſe, independent of any edematoſe or inflammatory tumefaction. In many caſes there is no coloured diſcharge in any period of a labour, and then the dilatation generally proceeds more ſlowly; for the diſcharge is not only a ſign that the parts are in a ſtate diſpoſed to dilate, but it alſo improves that ſtate. It is not only in colour or quantity that there is found much difference in this diſcharge, but alſo in conſiſtence and tenacity; it being in ſome caſes thin and watery, and in others thick and extremely viſcous.

6. But all theſe ſymptoms are not poſitive proofs of the exiſtence of labour; for we cannot conſider a woman as being in actual labour, unleſs ſhe has the uſual pains. Nor does all pain in the region of the *uterus*, certainly prove that a woman is in labour, becauſe ſuch pain may be excited towards the concluſion of pregnancy, by various cauſes, beſides the action of the *uterus*. Theſe pains are therefore diſtinguiſhed into two kinds, *true* and *falſe*; but the ſeat, the manner, and the degree of theſe pains, often reſemble each other ſo nearly, that it is very difficult, or impoſſible to diſtinguiſh them, and we are obliged to wait for the event, before we are able to decide.

The *true* pain of labour uſually begins in the loins, or lower part of the back, ſurrounds the *abdomen*, and terminates at the *pubes*, or upper part of the thighs; and it ſometimes obſerves a quite contrary direction. In ſome caſes the pain is confined to one particular ſpot, as the back, *abdomen*, thighs, or inferior extremities; in others, the pain is ſeated in ſome part far diſtant from the *uterus*, as in the knees, heels or feet. In ſome, the ſtomach is affected; in others, though very rarely, the brain, and then convulſions, or ſome derangement of its functions are brought on. In ſhort, the varieties of pain are innumerable, and theſe are explained by what we really do know, or fancy we know, of the influence of the nervous ſyſtem.

The pain attending a labour is periodical, with intervals of longer or ſhorter duration, according to the action of the *uterus*, on which it depends; and the more the pains are multiplied, the better it is for the patient. For if an effect of great importance to the conſtitution is to be produced, the more ſlowly it is made, provided the ſlowneſs of the progreſs does not depend on any morbid cauſe, the more gradual will be the change, and of courſe the danger which ſudden violence might produce, be avoided or leſſened; the diviſion of the pain being equal to the diminution, nearly in the ſame proportion, as rapidity is an addition to force. It is an old obſervation confirmed by daily experience, that

that after the completion of ſlow or lingering labours, patients uſually recover better than after quick ones; not to mention, that they are leſs liable to the untoward accidents which precipitation may immediately produce.

Thoſe who endure any kind of pain, expreſs their ſuffering by ſome peculiarity of manner, or by ſome tone of voice, which to a nice obſerver, will generally diſcover the part affected, together with the kind and degree of pain. Sharp pain is univerſally expreſſed by an interrupted and acute tone of voice; obtuſe pain by a continued and grave tone; unleſs the expreſſions are controlled by an acquired firmneſs of mind, which on particular occaſions, may enable it to riſe above the infirmities of the body. The expreſſions of pain uttered by women in the act of parturition, may be conſidered as complete indications of the ſtate of the proceſs, ſo that an experienced practitioner is as fully maſter of the ſtate of his patient, if he hears her expreſſions, as by any other mode of examination. He muſt however underſtand and make allowances for the peculiarities of different patients, or he will be deceived; becauſe in tender conſtitutions, the ſenſations being quick, and the reſolution faint, the mode of expreſſion will be according to the ſenſe, and not in proportion to the degree of abſolute pain.

In the firſt ſtage of a labour, the change conſiſts in the dilatation of the parts. Forcible or quick dilatation gives a ſenſation ſimilar to that produced by the infliction of a wound, and it is equally expreſſed by an interrupted and acute tone of voice. Theſe are popularly called *cutting* or *rending* pains. When the internal parts are dilated, and the child, or contents of the *uterus* begin to deſcend, the patient is, by her feelings, obliged to make an involuntary effort to expel; and the expreſſions are then made with a continued and grave tone of voice, or ſhe is mute. Theſe are called *bearing* pains. But there is an intermediate period of a labour, in which there is in the firſt inſtance ſome degree of dilatation, and afterwards an effort to expel; and then there will be the expreſſion which denotes ſharp pain, combined, or immediately ſucceeded by a graver tone of voice. When the child firſt begins to preſs upon and to dilate the external parts, the expreſſion becomes again acute and vehement; and laſtly, the expulſion of the child is accompanied with an outcry of ſuffering beyond what human nature is able to bear; or, the pain is endured with ſilence. The knowledge of theſe circumſtances, though apparently trifling and contingent, is really of ſome importance in practice, and permanent; as far at leaſt as the freedom, or reſtraint of the breathing can operate. If, for example, on any principle, the patient was induced

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in the beginning of labour, to retain her breath, and to make ſtrong efforts to expel, the order of the labour would be inverted; as it would alſo, when the parts were dilated and the expulſatory power wanted, if ſhe ſhould exclaim.

The pains of labour or childbirth, and the action of the *uterus*, are terms uſed ſynonymouſly, but they are not exactly the ſame thing. The action of the *uterus*, by which its contents are compreſſed into a leſs ſpace, and would be excluded, if there was any opening for their paſſage, firſt takes place as a cauſe; and this does not ſeem to be attended with pain. When ſome part reſiſts the paſſage of the contents of the *uterus*, the excluſion of which is the effect to be produced, there will then be pain, proportionate to the action—to the ſenſation of the reſiſting part—and the reſiſtance made. There is no way by which we can eſtimate the degree of force, but by the reſiſtance; nor the reſiſtance, but by the pain attending it; nor the pain, but by the expreſſion. Judging by induction of the force exerted, by the expreſſion of the pain, we ſay in common language a weak pain, a ſtrong pain, or a woman is delivered by her pains; and the purpoſe of conveying our meaning is anſwered, though the expreſſions are not ſtrictly legal. We may ſuppoſe the parts through which the child muſt paſs, ſo perfectly diſpoſed to dilate, that they would make little or no reſiſtance to the excluding force,

force, and then a woman would be delivered with very little or no pain. This obſervation will not only diſcover the reaſon of the great advantage obtained, by a labour being ſlow and lingering; why ſome women are delivered comparatively without pain; but, with this perfect diſpoſition to dilate, if the patient ſhould be aſleep when the action of the *uterus* came on, the poſſibility of her being delivered, before ſhe was quite awake.

In the converſation of thoſe who attend labours, it is often ſurmiſed, that women have much unprofitable pain. This ſtatement is not only unfair as to the fact, but the language is very diſpiriting; and it is often aſſigned as a reaſon, for an interpoſition altogether unneceſſary, and often injurious to the mother or child. No perſon in labour ever had a pain which was in vain. It may not be equal to the accompliſhment of the effect we want, at the time we wiſh, but every pain muſt have its uſe, as preparatory to, or abſolutely promoting the effect; and as we are not able to comprehend every poſſible cauſe of every ſtate, by endeavouring to remove what appears to be one ſlight ill, it often happens, that we occaſion many, and thoſe of greater conſequence.

Though the pains of labour return periodically, the intervals between them are of different continuance. In the beginning, they are uſually ſlight in their degree, and have long intervals; but as

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the labour advances, they become more violent, and the intervals are ſhorter. Sometimes the pains are alternately ſtrong and weak, or two feeble and one ſtrong; and there is reaſon to think that every variety has its advantage, by being ſuited to the apparent, or internal ſtate of every individual patient. In every circumſtance which relates to natural parturition, it is impoſſible not to ſee, and not to admire the wiſdom and goodneſs of Providence, in ordaining the power and fitting the exertion to the neceſſities of the ſituation, with a marked reſpect to the ſafety both of the mother and child. This perfect coincidence between the cauſe and effect ſhould afford a leſſon of patience, to thoſe perſons who when in labour become intractable, and by loſing their ſelf-poſſeſſion add to the unavoidable evils of their ſituation; and to thoſe practitioners, who being led away by popular errors, aim to add to the ſtrength of the pains, or to quicken their returns, and act as if they thought there was no other evil but that of a ſlow labour; an opinion, which in its conſequence has done more miſchief, than the moſt ſkilful practice ever did good.

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SECT. IV.

Though it was ſaid that pain was properly ſpeaking, a conſtituent part of a labour, it was alſo obſerved, that all pain in the region of the *uterus*, though periodical in its returns, was not a poſitive proof of the exiſtence of a labour. For whatever diſturbance is raiſed in the conſtitution, eſpecially in thoſe parts connected, or readily conſenting with the *uterus*, towards the concluſion of pregnancy, is very apt to induce the ſymptoms of labour, in a manner which makes it difficult to diſtinguiſh between *true* and *falſe* pain. Yet the good of the patient, as far as relates to the proper conduct of the enſuing labour, may depend upon the juſtneſs of the diſtinction; for if the pain which is *falſe*, be encouraged or permitted to continue, the action of the *uterus* would follow, and premature labour be occaſioned.

The cauſes of *falſe* pain are various; as fatigue of any kind, eſpecially too long ſtanding; ſudden and violent motions of the body; coſtiveneſs, or a *diarrhœa*; general feveriſh diſpoſition; agitation of the mind, and a ſpaſmodic action of the abdominal muſcles. Very frequently alſo the irregular and ſtrong movements of the child, in irritable conſtitutions, occaſion pains like thoſe ariſing from the action of the *uterus*. In ſome caſes, there is ſuch a cloſe reſemblance between *true* and *falſe* pains, that they cannot be diſtinguiſhed without an examination

tion *per vaginam.* If, during the continuance of a pain, no preſſure upon, or dilatation of the *os uteri* can be perceived, we may conclude that the pain is not the conſequence of the action of the *uterus*; and whatever likeneſs it may have, that it is not *true* pain. But if there ſhould be preſſure upon, or dilatation of the *os uteri*, during the continuance of the pain, we may conſider it as proceeding from the action of the *uterus*, and be perſuaded that the patient is really in labour. In a few caſes, I have known the action of the abdominal muſcles ſo regular and ſtrong, that the whole volume of the *uterus* has been heaved up and down alternately, in ſuch a manner that it was ſcarcely poſſible to diſtinguiſh between this ſtrange ſuccuſſion, and the proper action of the *uterus.*

The means to be uſed for the relief of *falſe* pain, muſt be guided by the cauſe. When it is occaſioned by fatigue of any kind, immediate eaſe will often be gained by a ſhort confinement in an horizontal poſition. In plethoric habits, or with a feveriſh diſpoſition, it will be neceſſary to take away ſome blood, and when the patient is coſtive, to procure ſtools by emollient clyſters, or gently opening medicines. In every caſe, when means adapted to the apparent cauſe have been uſed, it will be proper to give an opiate proportioned to the degree of pain, or to repeat it in ſmall quantities at proper intervals, till the patient ſhall be compoſed.

SECT. V.

It has been thought equally incumbent upon the practitioner to promote the power and effect of *true* pain, as it was to quiet that which was *falſe*. This opinion is perhaps more univerſally popular than any other throughout medicine, and having infected the minds of practitioners, it has been as injurious as it is general. From this ſource may be traced the opinion of the neceſſity, and the abominable cuſtom of giving aſſiſtance, as it is called, by dilating the internal and external parts artificially; of giving hot and cordial nouriſhment during labour, even in plethoric habits and feveriſh diſpoſitions, by which the nature of the principle which ſhould actuate the *uterus* is changed, the pains are rendered diſorderly and imperfect, and the foundation of future miſchief and difficulties is laid. Hence alſo was derived the doctrine of the neceſſity of patients helping themſelves, as it is called, by urging with all the voluntary force they are able to exert, beyond the dictates of nature; as if a labour was a trick to be learned, and not a regular proceſs of the conſtitution. Women ſhould be informed, that the beſt ſtate of mind they can be in at the time of labour, is that of ſubmiſſion to the neceſſities of their ſituation; that thoſe who are moſt patient actually ſuffer the leaſt; that, if they are reſigned to their pains, it is impoſſible for them to do wrong; and that attention is far more frequently required

required to prevent hurry, than to forward a labour. In every thing which relates to the act of parturition, Nature, not disturbed by disease, and unmolested by interruption, is fully competent to accomplish her own purpose. She may be truly said to disdain and to abhor assistance. Instead therefore of despairing and thinking they are abandoned in the hour of their distress, all women should believe, and find comfort in the reflection, that they are at those times under the peculiar care of Providence; and that their safety in child-birth is insured by more numerous and powerful resources, than under any other circumstances, though to appearance less dangerous.

SECTION VI.

In order to give a full and distinct view of a natural labour, it is expedient to divide the process into three periods or stages. In the first will be included, all the circumstances which occur, and all the changes made, from the commencement of the labour, to the complete dilatation of the *os uteri*, the rupture of the membranes and the discharge of the waters; in the second, those which occur from that time to the expulsion of the child; and in the

third, all the circumſtances which relate to the ſeparation and excluſion of the *placenta.*

In the beginning of labour, the *os uteri* is found in very different ſtates, in different women. In ſome it is extremely thin, and in others of conſiderable thickneſs; in ſome, it is rigid and cloſely contracted, but in others, it is much relaxed and ſomewhat opened, for ſeveral days, or even weeks, previous to the acceſſion of labour; in ſome caſes, the *os uteri* remains ſo high that it can with difficulty be reached, in the center of the ſuperior aperture of the *pelvis*, projected backwards, or on either ſide; whilſt in others, it is ſpread thin, and preſſed very low, before it begins to dilate. There is in ſhort every variety of ſtate and poſition, which a part conſtructed and connected like the *os uteri*, can be thought capable of undergoing.

The firſt part of the dilatation is generally made very ſlowly, the action of the *uterus* on which it depends, being feeble in its power and ſlow in its returns; but the more perfect the ſtate of relaxation is, with the greater facility the dilatation will be made. This is at firſt effected by the ſimple preſſure of the contents of the *uterus* upon the *os uteri*; but when the dilatation is made to a certain degree, the membranes containing the waters of the *ovum*, are inſinuated within the circle of the opening *os uteri*, and form a ſoft pillow, which at the time of every pain, acting upon the principle of a wedge, operates

operates with increaſing force according to the ſize it acquires; in conſequence of which, the latter part of the dilatation uſually proceeds with more expedition than the former.

There is no poſſibility of prognoſticating how long a time may be required for the complete dilatation of the *os uteri*; yet a tolerable conjecture, ſubject however to many deviations, may be formed by a perſon who has had much experience. If, for example, after a continuance of the pains for three hours, the *os uteri* ſhould be dilated to the ſize of one inch; then two hours will be required for dilating it to two inches, and three hours more will be neceſſary for dilating it completely, provided the action of the *uterus* ſhould proceed with regularity, and with equivalent ſtrength. But in ſome caſes, the *os uteri* will abide in nearly the ſame ſtate for ſeveral hours; and when the dilatation begins, it will ſoon be perfected. In others, after a certain degree of progreſs, the action of the *uterus* will be ſuſpended for many hours, and then return with great vigour.

With firſt children, this ſtage of a labour often makes the moſt tedious and important part of a labour, both on account of the time requiſite for compleating the dilatation of the *os uteri*, and becauſe the accompanying pain is more ſharp and harder to bear, than that which is attended with the effort to expel; which never fails to inſpire the patient

patient with the hope of being freed from the miſery which ſhe endures. When the parts are to our apprehenſion in the ſame ſtate, there will be a wonderful difference in the manner of, and the time required for dilatation, in firſt and ſubſequent children. There might be much difficulty in exploring and aſcertaining the cauſe of this difference, but we may preſume that a part which is accuſtomed to perform an office, or undergo a change, acquires a diſpoſition to the office or change, according to the number of times it has performed that office, or undergone that change. Something of the kind may be obſerved in newborn infants, in which there is often a tardineſs to execute what may be conſidered as the common functions of the body.

As a labour advances, the intervals between the pains become ſhorter, and their force is increaſed. At the time of each pain, the patient is reſtleſs and ſolicitous for the event; but when it ceaſes, by a happy oblivion, ſhe ſoon forgets it, and is unmindful of its return. In ſome conſtitutions, the labour, inſtead of adding to the irritability of the habit, and exciting its powers to action, occaſions a degree of inſenſibility; or the patient falls into a ſound ſleep, the moment the pain begins to abate, from which ſhe is awakened by its return. In others, the power exerted by the *uterus*, aided by that of the abdominal muſcles and diaphragm, being

ing inſufficient for the purpoſe of dilating the *os uteri*, or that part becoming unuſually irritable by the frequent impreſſions made upon it; then, by its conſent with the ſtomach, extreme ſickneſs or vomiting is brought on, ſometimes after every pain, by which the labour is very much forwarded; one fit of vomiting, according to popular obſervation, doing more ſervice than ſeveral pains. But when the *os uteri* is dilated, patients have very ſeldom an inclination to vomit, from any natural cauſe. Vomiting very often attends the paſſage of a ſtone through the *ureters*, or the *gall-ducts*, from the ſame cauſe, and with the ſame effect.

By regular returns of pain, or with the varieties before mentioned, with many others which it is impoſſible to enumerate, the *os uteri* becomes at length wholly dilated. Whether a ſhort or a long time be required for this purpoſe, it is the duty of the practitioner to abſtain from interfering in this part of the proceſs. It may ſometimes be neceſſary to pretend to aſſiſt, with the intention of giving confidence to the patient, or compoſing her mind. But all artificial interpoſition contributes to retard the event ſo impatiently expected, by changing the nature of the irritation and the action thereon depending; by inflaming the parts, and rendering them leſs diſpoſed to dilate; in ſhort, by occaſioning either preſent diſorder, or future diſeaſe. For theſe reaſons, we muſt be firm, and reſolved to

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withſtand the intreaties which the diſtreſs of the patient may urge her to make, as we muſt alſo the dictates of vehemence and ignorance. Others may be impatient, but we muſt poſſeſs ourſelves, and act upon principle. The event will juſtify our conduct; and though there may be temporary diſlike and blame, if we do what is right, there will be permanent favour and reputation.

During the continuance of a pain, the membranes containing the waters are turgid, preſſed upon, and within the circle of the *os uteri*, according to the ſtrength of each pain, by which the further dilatation is promoted; but in the abſence of a pain, the membranes become flaccid, and ſeem to be empty. Theſe different ſtates of the membranes are readily explained by the obſervations before made, by our knowing that when the *uterus* is in action, its cavity is leſſened, and of courſe its contents are compreſſed; but that on the ceſſation of the action, the cavity of the *uterus* is again enlarged, and the compreſſion removed. Hence it becomes neceſſary, when an examination *per vaginam* is made during the time of a pain, that we ſhould be cautious not to break the membranes; and if any accurate inveſtigation is needful, either of the ſtate of the parts, or of the poſition of the child, that it ought to be made in the interval between

tween the pains, or protracted till the pain has ceaſed.

In a ſhort time after the *os uteri* is wholly dilated, the membranes are uſually ruptured by the force of the pains, and the waters of the *ovum* are diſcharged in one large guſh or ſtream. But in many caſes, the membranes break ſpontaneouſly long before this period, without any material inconvenience. In ſome they are not ruptured when the dilatation of the *os uteri* is completed, but are protruded by each ſucceſſive pain lower down into the *vagina*, and then within the *os externum*, which they alſo dilate; and at length a ſmall bag of water is formed without the *os externum*, which can ſerve no farther purpoſe.

It is a commonly received opinion among the lower claſs of people, that the child ſhould be born ſpeedily after the rupture of the membranes and the diſcharge of the waters. This opinion is not founded in prejudice, but in ſound obſervation, and was probably firſt entertained by thoſe who were engaged in the care of breeding cattle, in which this is the uſual courſe of parturition; and I believe it would often happen in the human ſpecies, if the progreſs of the labour was not, by ſome means or other, diſturbed or interrupted. But it has been a cuſtom, which at the preſent time is not unfrequent with practitioners, urged by the diſtreſs and ſuffering of thoſe whom they are

attending, or by the concern of friends, or by a perſuaſion of its propriety and advantage, and ſometimes perhaps by their own impatience, to break the membranes before the *os uteri* is dilated. If theſe are ruptured ſpontaneouſly, or artificially before the *os uteri* is dilated, the child cannot poſſibly follow immediately; and all that is gained, is by bringing the head of the child, inſtead of the membranes containing the waters, into contact with the *os uteri*. This cannot be conſidered as any advantage, as it changes a very ſoft and accommodating medium, provided by Nature for the end of preventing any undue violence upon a very tender part, for the hard and unaccommodating head of the child. Nor is this the only ill conſequence which follows: by this proceeding, we occaſion a general derangement of the order of the labour, which is never done with impunity, as it may afterward become the cauſe of a laceration of the external parts, or even of an unfavourable ſeparation of the *placenta*. Moreover, by this premature rupture of the membranes, we often defeat our own purpoſe, and by diſturbing, protract inſtead of haſten the labour. Let us therefore agree in eſtabliſhing it as a general rule for our own conduct, that the membranes ſhall never be ruptured artificially, before the *os uteri* is fully dilated; and be perſuaded, that it is afterwards unneceſſary, unleſs there ſhould be

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ſome cauſe more important, or ſome reaſon of more weight, than thoſe which have been commonly aſſigned.

SECTION VII.

In the ſecond period or ſtage of a labour, will be included all the circumſtances attending the deſcent of the child—the dilatation of the external parts—and, the final expulſion of the child.

Notwithſtanding the definition of a natural labour which was before given, this is not to be conſidered as a proceſs going on in one unvarying line, and that every aberration is to be thought of ſufficient importance to conſtitute a labour of another claſs. In this reſpect the definition of a labour may be compared to that of health, which however correct in general, if ſubmitted to a critical examination, would not correſpond, in all points, with the ſtate of any individual perſon. In like manner, though a labour cannot come under the denomination of *natural*, without the three diſtinguiſhing features, yet we may probably never meet with any two labours, in all reſpects exactly ſimilar. There are perhaps more frequent deviations in the firſt ſtage of a labour than in the reſt, both with regard to the time and the manner in which the *os uteri* is dilated. Nor is the firſt ſtage concluded

either by the dilatation of the *os uteri*, or by the rupture of the membranes and the diſcharge of the waters, but by the concurrence of theſe circumſtances; and the farther the labour is advanced before the membranes break, the better it afterwards terminates. For before that event there is leſs violence done to the mother, and leſs ſtreſs upon the parts; becauſe they are without much ſuffering, acquiring every moment a better diſpoſition to dilate; and till that has happened, whatever may be its poſition, the child undergoing no compreſſion, is free from all chance of injury.

When the membranes break, if the *os uteri* be fully dilated, the child, though reſting at the ſuperior aperture of the *pelvis*, either ſinks by its own gravity, if the patient be in an erect poſition, or is propelled by a continuance of the ſame pain by which they were broken; or after a ſhort reſpite, the action of the *uterus* returns, and the head of the child is brought ſo low as to preſs upon the external parts; properly ſpeaking, upon the internal ſurface of the *perinæum*. In its paſſage through the *pelvis*, the head of the child, which at the ſuperior aperture was placed with one ear to the *pubes* and the other to the *ſacrum*, or with different degrees of diagonal direction, undergoes various changes of poſition, by which it is adapted to the form of each part of the *pelvis*, with more or leſs readineſs, according to its ſize, the degree of its offifi-

oſſification, and the force of the pains. With all theſe changes, whether produced eaſily or tediouſly, in one or in many hours, the practitioner ſhould on no account interfere, provided the labour is *natural.* If he attempts to correct and to regulate every ſlight deviation, or uſes any artificial means for haſtening the proceſs, the events of his practice will convince him, that he has exerciſed his art on unneceſſary and improper occaſions. He will moreover be taught, though he may acquire momentary approbation, by endeavouring to remove every little preſent inconvenience, that diſeaſes, then far diſtant, will be attributed to his miſconduct, and ſometimes not without reaſon. In this kind of labour, he may with confidence rely upon the powers and reſources of the conſtitution, which will produce their effect with leſs injury either to the mother or child, and with more propriety than can be done by the moſt dexterous human ſkill.

When the head of the child begins to preſs upon the external parts, theſe yield in a ſhorter or longer time, and with more or leſs eaſe, according to their natural rigidity, the degree of diſpoſition to dilate which they have aſſumed during the labour, and the number of children which the patient has before had. The prevention of any injury to the mother, when the child is paſſing through the external parts, being eſteemed a circumſtance wholly depending upon the care of the practitioner, this

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part of our ſubject deſerves a ſeparate and particular enquiry.

SECT. VIII.

When the head of the child firſt begins to preſs upon and dilate the external parts, every pain may be ſuffered to produce its full and natural effect, without the hazard of miſchief. But when a part of the head is inſinuated between them, and the *perinæum* is upon the ſtretch, they are liable to be injured by the violence of the diſtention. Any of theſe parts may be injured, but the *perinæum* in particular is ſubject to a laceration, which may not only extend ſo far as to occaſion much preſent uneaſineſs, but very deplorable conſequences for the remainder of the patient's life. It is therefore our duty to enquire into the merits of the different methods which have been recommended for the prevention of this accident, more eſpecially as it admits of very imperfect relief, when it has happened.

* Yet it is very remarkable that none of the ancient writers either adviſe any method by which

* In the works of *Eros*, who lived in the 13th century, and which were publiſhed by *Spachius*, this accident is mentioned, and an awkward method of preventing it is recommended.

this

this accident may be prevented, or any means to be uſed for its relief; excepting ſuch as were generally recommended for inflamed, ulcerated, or fiſtulous parts. We may therefore preſume that it is an accident which did not frequently occur in their practice, or that it was eſteemed of too little conſequence to engage their attention. With reſpect to the former opinion, it may be obſerved, that whatever event is the conſequence of any cauſe, muſt at all times be produced under the ſame circumſtances, if that cauſe continues to exiſt and to act. But thoſe who had not perfection in view, and formed no very nice rule for their own conduct, might not be ſenſible of deviations, and would not adjudge diſagreeable conſequences to their own error or miſmanagement. They did not therefore adviſe any method of preventing this accident, becauſe they were ignorant of the cauſe, or they undervalued it.

It may be further obſerved, that the oldeſt writers in midwifery lived before the Chriſtian religion was eſtabliſhed, and in countries in which polygamy was allowed; when the death or infirmity of one wife were comparatively of little importance to him who had many, equally, or in ſome degree, partaking of his affection. But on the eſtabliſhment of the Chriſtian religion, by which the bad diſpoſitions of the human mind were corrected, and its better qualities exalted, one wife only being

ing allowed to one man, and ſhe being ſuppoſed to poſſeſs the entire affections of her huſband, every diſeaſe or infirmity which might render her perſon leſs agreeable to him, became of infinite conſequence to their mutual happineſs. Thoſe only who in the preſent ſtate of ſociety, have had an opportunity of ſeeing the many evils which flow from this alienation of affection, the cauſe being perhaps unknown to the parties themſelves, can be ſufficiently aware of the importance of this and many other accidents to which women are ſubject; and which are often neglected and diſregarded, becauſe they are not attended with immediate danger.

Still the queſtion remains to be decided whether women are, by any peculiarity of conſtruction, naturally or neceſſarily ſubject to a laceration of the *perinæum*; or whether this accident be the conſequence of opinions entertained, and of alterations in the frame occaſioned by the peculiar manners of ſociety, or of any adventitious circumſtance whatever, at the time of delivery. * It was before obſerved, that none of the claſſes of animals are liable to a laceration of the *perinæum*; except when extraordinary aſſiſtance is given, in caſes of otherwiſe inſuperable difficulty; and it is well known that the laceration does not univerſally happen to thoſe women who are delivered before proper

* See the Introduction, Chap. II. Sect. 2.

aſſiſtance

aſſiſtance can be given. It is alſo to be remarked, that as far as relates to the ſtate of all the internal parts, the changes which they undergo at the time of parturition, are not only effectually, but moſt ſafely produced, by the inſtinctive efforts of the parent. From a general ſurvey of the wiſdom, order, and benignity, ſo clearly apparent in all the deſigns of Providence, in every circumſtance particularly which relates to the propagation of the different ſpecies of animals; and the co-aptation, as it were, of that wiſdom to the neceſſities of thoſe of every kind, we might perhaps be juſtified in making this general concluſion, that women, in every circumſtance which relates to their ſafety and well-doing in natural parturition, are not left in a more deſtitute ſtate than animals. For though it were proved, that women are liable to greater natural evils and difficulties in parturition than animals; the proofs of theſe, would equally ſatisfy our minds, that they are alſo provided by nature with many peculiar reſources, and with powers, which are limited only, by the degree of the difficulties which require their exertion.

Nevertheleſs, from the frequency of the laceration of the *perinæum*, when women are delivered without aſſiſtance, and from the difficulty with which it is ſometimes prevented when the moſt judicious and ſkilful aſſiſtance is given; it is believed by many, that women muſt often be unavoidably

voidably ſubject to it, and that the prevention muſt ever remain an object of human ſkill. Now, with reſpect to the firſt ſtatement, that of the laceration happening when women are delivered without aſſiſtance, it does not follow, that it is inevitable; for even then it may be the production of error in the patient herſelf, or her friends. Becauſe from the hurry and ſolicitude of their ſituation, ſhe may have been encouraged to make great voluntary efforts, when the head of the child was on the point of coming into the world, merely becauſe ſhe was not aſſiſted; or, after the expulſion of the head, inſtead of waiting for the body to be expelled alſo, ſome officious perſon preſumed to extract it without regard to time, or the direction of the *vagina*. As to the difficulty or impoſſibility of preventing the laceration in ſome caſes, we are to conſider that what may happen in a ſtate of ſociety, might not have happened in a ſtate of nature; that the foundation of the accident may have been laid by ſomething done in the preceding ſtage of the labour; and that it may be very much doubted, whether ſome of the methods practiſed for the prevention, may not in fact have been the cauſe of the accident.

But the conduct of the practitioner is not to be guided by reflections on what his patients might do or bear, with conſtitutions healthy and firm, and with minds untainted with prejudices; but by due

due conſideration of what they are *now* capable of doing or bearing; and he muſt adapt his rules and his practice to the ſtate in which he actually finds them. From ſome natural or acquired cauſe, the laceration of the *perinæum* certainly does very often happen; and as ſo much of the future happineſs of a woman may depend upon its prevention, we will grant, what is in many caſes true, that it is always to be prevented by our ſkill and care; as no harm can ariſe from the opinion, if it is erroneous.

In the beginning of a labour, eſpecially with firſt children, it is not unuſual to find the external parts cloſely contracted, and void of all diſpoſition to dilate: yet in the courſe of a few hours, even when they have undergone no kind of preſſure, but merely by a diſpoſition aſſumed from their conſent with the internal parts, they become relaxed and ſoft. The longer the time therefore which paſſes between the commencement of labour and the birth of the child, the leſs liable to a laceration will the *perinæum* be; for it is never lacerated in a very ſlow labour, whatever may be the ſize of the child. But if it was poſſible to hurry a labour in ſuch a manner, that the head of the child ſhould be brought into contact with, and preſſed forcibly upon the external parts, before they had acquired the diſpoſition to dilate, they would be univerſally torn, unleſs the accident was prevented by art;

and the chance of the accident would be according to the degree of precipitation, and many hours after the act by which the labour was hurried, was forgotten.

When the head of the child is inſinuated within the external parts, if theſe do not eaſily yield to the occaſion, it has been cuſtomary to dilate them artificially, under the idea of preparing them, to allow of the more ſpeedy paſſage of the head. During every pain, it is obvious that the parts undergo as much diſtention as they are capable of bearing without injury; and this preparation irritating and cauſing an additional ſtreſs upon them, nothing is more clear, than that this method of proceeding contributes to their laceration. All artificial dilatation of the parts, all attempts to ſlide the *perinæum* over the head of the child, are to be forborne and avoided as pernicious.

When the external parts are very rigid, we have been taught that it is of great ſervice to anoint them frequently and unſparingly with ſome unctuous application, with the intention of giving, or improving that diſpoſition to dilate which is wanting. If the parts are cloathed with their proper *mucus*, as the uſe of any application in the manner adviſed would wipe that away, we ſhall find ointments of any kind a very poor ſubſtitute for that *mucus*, and that there is little profit from their uſe. If the parts are heated and dry, the application

cation of flannel wrung out of warm water, and then ſome ſoft and ſimple ointment may be ſerviceable, by abating their heat, giving them a diſpoſition to ſecrete their proper *mucus*, and of courſe favouring their dilatation.

In ſome conſtitutions the different parts concerned, are not equally inclined to dilate. Sometimes the internal parts dilate in the moſt kindly manner, when the external are in a contrary ſtate; and ſometimes the internal are very rigid, when the external have the greateſt aptitude to dilate, yielding to the firſt impulſe of the head. There is in all infinitely more difficulty with firſt than with ſubſequent children, not from rigidity only, but if we may be allowed the expreſſion, from ignorance how to dilate; and from a certain degree of re-action in the parts during the continuance of every pain. It is therefore often obſerved that the head of the child advances more, and with greater ſafety, when the violence of a pain begins to abate, than during its continuance in full force; becauſe the re-action of the parts is then the ſtrongeſt.

During a pain there is often reaſon to expect that the head of the child would be excluded; but the moment the pain declines, the head is retracted a conſiderable way into the *vagina*, and the external parts cloſe again. No other inconvenience ariſes from this cauſe, than a little prolongation

gation of the labour, which may be irkſome, but cannot be injurious. If the parts do not diſtend favourably, ſhould the head of the child abide within them in the abſence of a pain, it may be expedient to repel it, in imitation of this natural occurrence, for the purpoſe of preventing the laceration.

When the head of the child is every moment expected to paſs through the external parts, we have been adviſed by ſome, to forward the emergence of the head from under the arch of the *pubes*. Others have on the contrary aſſured us, that it is more eligible to prevent for a certain time this emergence, by which means, not only time is given for the parts to dilate, but the head of the child is brought to paſs through them in its ſmalleſt *axis*, and leſs diſtention is thereby occaſioned. Whoever has reflected upon this ſubject, would heſitate as much to believe, that in the general diſpenſation of Providence, it ſhould have been left to human ſkill to guide the head of the child at the time of birth, in a direction different from that in which it moſt commonly preſents, as that it could have been intended for the generality of children to have been brought into the world by inſtruments, or by any human invention. As far as my experience enables me to judge, neither of theſe methods ought to be followed, nor any other which requires a complication of artifice; for after a trial

a trial of them all, I am convinced that the moſt effectual method of preventing a laceration, or any injury to the parts, is to be founded on the ſingle principle of retarding or hindering, for a certain time, the paſſage of the head of the child through them. This retarding may depend on the compoſure of the patient and the ſkill of the practitioner; and thoſe errors of which the former might be guilty, the latter muſt obviate and correct.

When the head of the child is nearly born, the effort to expel is made inſtinctively, and it is uſually vehement; the breath being retained for the purpoſe of ſtrengthening that effort. The patient may alſo, from a perſuaſion of its being neceſſary and proper, or at the inſtance of her friends, ſtrive with much voluntary exertion to add to the force of the pain, for the purpoſe of expelling the child moreſpeedily. If we preſume that the danger of injuring the parts, depends merely upon the rapidity with which the head may be expelled, and that theſe are only able to bear without injury ſo much diſtention as is occaſioned by the inſtinctive efforts; then all the additional voluntary force is beyond what is either needful or ſafe. * It is therefore requiſite that we ſhould do away this voluntary force, by convincing the patient of its impropriety, and diſſuading her from exerting her-

* See the Introduction, Chap. II. Sect. 2.

ſelf;

ſelf; or leſſen at leaſt the voluntary effort, by urging her to talk or cry out during the time of a pain, which will prevent her from retaining her breath; or if her ſufferings are ſo great, that ſhe cannot command her own actions, then the efforts ſhe makes, muſt be reſiſted on our part by the application of ſome equivalent force, in the manner we ſhall ſoon conſider. When the patient has been outrageous, and the danger of a laceration very great; I have ſometimes gained a reſpite, by telling her ſuddenly in the heighth of a pain, that the child was already born.

Every thinking man will carry the principles he has conſidered and approved, in his remembrance, through the whole courſe of his practice; but the methods by which his principles are purſued, muſt be carefully ſuited to the particular exigencies of every individual caſe. In the ſubject of which we are now ſpeaking, there is a number of little circumſtances, the knowledge of which can only be learned by reflection and experience. But it will generally be ſufficient for the practitioner to reſiſt the progreſs of the head of the child, during the time of a pain, by placing upon it the fingers and thumb of the right-hand, ſo formed that they may bear upon many points; or, to apply the palms of one or both of the thumbs in ſuch a manner, that they ſhall at the ſame time ſupport the *fourchette*, or thin edge of the *perinæum*. But in firſt children,

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when from the vehemence of the patient, and the rigid ſtate of the parts, there is great reaſon to apprehend a laceration of the *perinæum*; then, occaſionally calling in the other means to our aid, we ſhall be able to give the moſt powerful and effectual ſupport, by applying the palm of the left-hand, covered with a ſoft cloth, over the whole * temporary and natural *perinæum*; with a force ſufficiently firm, to reſiſt the exertions of the patient, during the violence of the pain. In this way we are to proceed, till the parts are ſufficiently dilated, when the head may be permitted to ſlide through them, in the ſloweſt and gentleſt manner; and we are never to quit our attention, till it is perfectly cleared of the *perinæum*. Should there be any heſitation or awkwardneſs when the *perinæum* ſlides over the face, the fore-finger of the right-hand muſt be paſſed under its lateral edge, by which it may be cleared of the chin, before the ſupport given by the left-hand is withdrawn. When the pains are exceedingly ſtrong, and the patient impetuous in her efforts, the head will ſometimes be expelled with wonderful velocity, in oppoſition to all the reſiſtance we are able to make; but by this calm and ſteady proceeding, we may be aſſured that we ſhall, under all circumſtances, wholly prevent, or greatly leſſen all the evils to

* See the Introduction. Chap. II. Sect. 2.

which ſhe would have been liable, if our conduct had been different.

It is neceſſary to obſerve, that theſe attempts to prevent the laceration of the *perinæum*, produce ſome effect upon the head of the child and upon the parts of the mother. In the application therefore of the reſiſting force, we muſt not only be careful that the poſition of the patient is proper, and ſuch as will allow us to act with advantage; but that we do not make any injurious or partial preſſure. It muſt be equally applied and uniformly exerted; and then there will be no more prejudice than what might be occaſioned by the rigidity of the parts.

When the head of the child is expelled, perhaps the conſequences of an inſtant tranſition from extreme miſery, to total freedom from pain and to poſitive joy, are in no caſe to which human nature is ſubject, more conſpicuous and intereſting; though the delivery be not completed. It was formerly ſuppoſed neceſſary for the practitioner to extract the body of the child, immediately after the expulſion of the head, leſt it ſhould be deſtroyed by confinement in this untoward poſition. But experience has not only proved, that the child is not on that account in any particular danger; but that it is really ſafer and better, both for the mother and child, to wait for the return of the pains, by which it will ſoon be expelled; and a more favourable exclu-

exclusion of the *placenta* will also by that means be obtained. In the course of a few minutes after the expulsion of the head, the action of the *uterus* returning, the shoulders of the child advance, and the external parts of the mother being again brought upon the stretch, the practitioner must place the fingers of his right-hand on each side of the neck; and at the same time with the left, support the *perinæum*, with as much circumspection as when the head was expelled: he must then conduct the body slowly in the direction of the *vagina*, till it is wholly extricated.

The child is to be placed in such a situation that the external air may have free access to its mouth, its head being covered: care being then taken of the mother, we must proceed to tie the navel string in the manner recommended in the next section.

SECT. IX.

The operation of tying and cutting the navel-string when the child is born, though in itself of no great importance, was formerly thought to require so much skill and judgement, as to give a professional name to those who are now called practitioners in midwifery. But every thing which re-

lates to the treatment of the mother, or child, is of ſome conſequence; and even in trifling matters, there is a propriety of manner, the want of which may leſſen the eſtimation of every perſon's character.

It ſeems to have been a practice with the ancients, to wait for a certain time after the birth of the child for the excluſion of the *placenta*, before the navel-ſtring was tied or divided. If the child was born apparently dead, or in a very feeble ſtate, the *placenta* was laid upon its belly, as a reſtoring, or comforting application. When the child revived but ſlowly, or when the ſigns of life declined, it became a cuſtom to lay the *placenta* on hot embers, or to immerſe it in hot wine, and the heat thereby conveyed, was ſuppoſed to ſtimulate the weak or decaying powers of life to more vigorous action. It has ſince been the practice to divide the *funis* immediately after the birth of the child, and the weaker this was, the more expedition was to be uſed; for the child being ſuppoſed to be in a ſtate ſimilar to that of an apoplectic patient, a certain portion of blood might by that means be diſcharged, and the imminent danger inſtantly removed. There is another method which I have ſeen practiſed, the very reverſe of the former; for in this, the loſs of any quantity of blood being conſidered as injurious, the navel-ſtring was not divided, but the blood contained in its veſſels was repeatedly ſtroked from the

the *placenta* towards the body of the child. In all theſe different methods, and many others founded on directly contrary principles, children have been treated in different times and countries, and yet they have generally done well; the operations of nature being very ſtubborn, and happily admitting of conſiderable deviation and interruption, without the prevention of her ends.

There is yet in all things a perfectly right, and a wrong method; and though the advantage or diſadvantage of theſe may be overlooked, the propriety and advantage of the right method muſt be evidently proved by individual caſes, and of courſe by the general reſult of practice. In this, as well as in many other points, we have been too fond of interfering with art, and have conſigned too little to nature; as if the human race had been deſtined to wretchedneſs and diſaſter, from the moment of birth, beyond the allotment of other creatures.

Perhaps the changes which take place in the body of the child, immediately after its birth, at leaſt the manner in which they are produced, are not perfectly underſtood at this time. * But we know if the child is in a healthy ſtate, that it cries luſtily and continually, when the air firſt ruſhes into

* See *Peu* Pratique des Accouchments, Livre I. Chapit. xii. 18. And an Eſſay on the Treatment of Women in Child-bed; written by my very ingenious and indefatigable friend Mr. *Charles White.*

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its lungs, which are thereby expanded. This cry, which does not ſeem to be occaſioned by pain but ſurprize, is in its conſequences extremely important; as it is the cauſe of an exertion of all the powers of the child, and enables it to acquire a new manner of living, inconſiſtent with, and very different from that which it poſſeſſed before it was born. But the change from uterine life, as it may be called, to breathing life, is not inſtantaneous, but gradual; and the uterine life continues, till the breathing life is perfected, as is proved by the continuance of the circulation between the child and *placenta*, for ſome time after it has cried. As the breathing life becomes perfected, the uterine life declines, and the manner of its declenſion may be proved by attending to the pulſation of the navel-ſtring, which firſt ceaſes at the part neareſt the *placenta*, and then by ſlow degrees; nearer and nearer to the child, till at length it entirely ceaſes; ſo that the whole of the circulating blood ultimately reſides in the body of the child, and the navel-ſtring becomes quite flaccid. It ſeems reaſonable to believe that the continuance of the uterine life after the birth of the child, was deſigned for its preſervation from the accidents of its ſtate at that time; ſhould the acquiſition of its breathing life be by any cauſe, retarded or hindered. If then the practice of tying, or dividing the navel-ſtring the inſtant the child is born, be followed, though

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it were before vigorous, it will in ſome caſes immediately decline, and never acquiring its perfect breathing life, will in a ſhort time die: Or, if the child were in a feeble or a dubious ſtate, poſſeſſing only that life which it had during its reſidence in the *uterus*, as by tying and dividing the navel-ſtring that life is deſtroyed before the breathing life is acquired, it muſt inevitably periſh. We may therefore ſafely conclude, that the navel ſtring of a new-born infant ought never to be tied or divided, till the circulation in it has ceaſed ſpontaneouſly.

With reſpect to the manner of tying the navel-ſtring, there has alſo been much difference of opinion, whether there ſhould be one or two ligatures, and in what part theſe ſhould be fixed. Two ligatures were adviſed on the preſumption, that by the end of the *funis* next the *placenta*, the maternal blood might be diſcharged, and the parent brought into great danger, as if there were two currents of blood circulating in the veſſels; and by ſome it was alſo ſuppoſed proper to uſe two ligatures, for the purpoſe of retaining the blood; preſuming that the *placenta* would be caſt off more commodiouſly, in the manner of a gorged leach. On the contrary, one ligature has been recommended, that we might have an opportunity of draining away as much blood as poſſible from the *placenta*, by the divided end of the *funis*, which was ſuppoſed to produce an advantage equal to the dimi-

diminution of the bulk of the *placenta*. But if the cuſtom of deferring to make the ligatures till the circulation in the *funis* ceaſes, be eſtabliſhed, all this reaſoning in favour of one or two ligatures will fall to the ground. Yet, as there is a poſſibility in the caſe of twins with a double *placenta*, of the child yet unborn, loſing its blood by the divided *funis* of that which is born, and from the habit of uſing them, on the whole I prefer two ligatures; more eſpecially as no harm can ariſe from them, even if one ſhould be uſeleſs. As to the part where the ligature ought to be fixed, it is of no real conſequence; becauſe the future ſeparation of the *funis* will not be made at the ligature, where-ever that is fixed, but at a line, evidently marked, and cloſe to the belly of the child; and as to the materials uſed, provided they are not ſo thick as to be cumberſome, nor ſo thin as to cut the *funis*, it is all that is required.

In the courſe of ten or twenty minutes, and ſometimes longer, after the birth of the child, the circulation in the *funis* having ceaſed, one ligature is to be fixed upon it about three inches from the belly of the child, and another at twice that diſtance, with ſo much force as to repreſs the circulation which may happen to return, and yet not ſo firmly as to divide it. The navel-ſtring may then be cut with a pair of ſciſſars between the two ligatures, and the child given to a careful aſſiſtant.

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It was formerly the cuſtom to divide the *funis* under the bed-cloaths; but having once known a very deplorable accident happen from this cauſe, I make it a general rule to withdraw the child, that I may have an opportunity of ſeeing, when I tie or divide the *funis*.

SECTION X.

Soon after the birth of the child, it is proper to apply the hand upon the *abdomen* of the mother, to aſcertain whether there be another child; or whether the *uterus* be contracting in a manner favourable to the ſeparation and excluſion of the *placenta*. Both the doctrines and cuſtoms of practice, regarding the management of the *placenta*, have been exceedingly different, even in common caſes; and though one method of proceeding may be more generally preferred and followed than the reſt, there is much diverſity in the conduct of individual practitioners; who may be ſuſpected to act ſometimes in a manner contrary to their own judgement, in compliance with the prejudices of thoſe by whom they are employed. The minds of all women are full of ſolicitous fears, till the *placenta* is brought away; and the ſooner this is done, after the child is born, the more they are gratified. But though the diſcovery of truth, and the fidelity of practice founded thereon, may not

always be acceptable ; yet in all practitioners, however desirous of obliging, there must be some firmness of mind, some determination to act upon principle, or they will be perpetually involved in error ; and led to do what may be productive of immediate or distant mischief, in order to avoid the evil of present censure.

In the history which has been given of the former stages of a natural labour, it appears that all the passive changes which the parts undergo, and all the active powers exerted for producing these changes, are not only entirely independent of the will of the patient, but are fully equal to the end which they were designed to accomplish, without any assistance ; which is no more wanted for the purpose of forwarding a natural labour, than for any of the ordinary functions of the body. When we have seen a child safely expelled, by a process beautiful, and regulated by the greatest wisdom, there seems to be no reason why we should be apprehensive of error, or inability, in the separation or exclusion of the *placenta*, which is but an inferior and secondary part of the same process ; or, why we should not in this, as in all other cases of medicine, be first convinced of the necessity of using art, before we attempt to give assistance. On the proper management of the *placenta*, the life of the patient may depend ; and it is therefore fitting and necessary, that our conduct should be guided by the dictates of reason and experience.

After a natural labour, especially with a first child;

child; the pain which the patient has ſuffered, and the exertions by which the expulſion of the child was effected, will have occaſioned a proportionate degree of temporary fever; and ſhe will be in the ſame ſituation as if ſhe had undergone ſome exceſſive fatigue. By the birth of the child ſhe is freed from her ſuffering, and it muſt be our firſt employment to reſtore tranquillity to her mind, to calm the hurried circulation of the blood, and to bring her as ſoon as we can into a quiet and natural ſtate. In the courſe of ten, and ſeldom of more than twenty minutes, the action of the *uterus* is again excited, which is indicated by pain, leſs in degree, but in other reſpects like that of which ſhe complained, when the child was expelled. It ſeldom happens that the *placenta* is either ſeparated or expelled by the firſt pain; but when that has ceaſed for a few minutes, it is again renewed, and on examination, the *placenta* is often found deſcended or deſcending into the *vagina*; where it may with ſafety and propriety be ſuffered to abide, till it is wholly expelled by a repetition of the pains. But if the *placenta* ſhould deſcend very ſlowly, or the patient be much diſturbed, the practitioner may take hold of the *funis* *, and by gentle pulling in the time of a pain, and in a pro-

* When the young has been a ſhort time expelled, carnivorous animals lay hold of the navel-ſtring with their teeth, in order to extract the *placenta*. It is probable, that a woman in a ſtate of nature, would, with her own hands, give ſomething like the ſame aſſiſtance; and in the force I uſe to bring down the *placenta*, I always bear in mind this circumſtance.

per direction, favour its ſeparation and deſcent. But whether the *placenta* ſhould deſcend into the *vagina* ſpontaneouſly, or be brought down by the aſſiſtance given, it ſhould be ſuffered to remain there till it is excluded by the pains; at leaſt, it ſhould not be extracted, before the hurry occaſioned by the labour is wholly compoſed, and the *uterus* has had ſufficient time to contract in ſuch a manner, as to prevent any alarming hemorrhage. The *placenta* ſeldom remains more than one hour in this ſituation; but if it ſhould not be excluded at the end of that time, we may again take hold of the *funis*; and aiding the force of a pain, in the gentleſt and ſloweſt manner, bring the *placenta* through the *os externum*: we muſt be likewiſe cautious to bring down the membranes as perfectly as we can, that any *coagula* formed in the cavity of the *uterus*, may be enveloped in them, and one principal cauſe of after-pain be removed. Then the patient being put in a comfortable ſtate, and as little diſturbed as poſſible, may be left to her repoſe.

In this third ſtage of a labour, many inconveniencies, and many impediments to the excluſion of the *placenta* may occur; ſome of which may require a longer time to be given, and others the aſſiſtance of art, for the removal or prevention of danger. But of all theſe difficulties, and the means of giving relief, we have already ſpoken very fully, in the *Eſſay on Uterine Hemorrhages.*